



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,195	02/26/2002	Stuart D. Downes	EMC02-01(00053)	8456

7590

07/18/2003

David E. Huang, Esq.
CHAPIN & HUANG, L.L.C.
Westborough Office Park
1700 West Park Drive
Westborough, MA 01581

EXAMINER

JOHNSON, JONATHAN J

ART UNIT

PAPER NUMBER

1725

DATE MAILED: 07/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/083,195

Applicant(s)

DOWNES, STUART D.

Examiner

Jonathan Johnson

Art Unit

1725

-- **Th MAILING DATE of this communication appears on th cover sh et with the correspondence address --**

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19 and 20 is/are allowed.
- 6) ☒ Claim(s) 13,16,21,22 and 25-27 is/are rejected.
- 7) ☒ Claim(s) 14,15,17,18,23 and 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5. 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 13, 16, 21, 22, and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teshima et al. (5,593,080). With respect to Claim 13, Teshima et al. teach a method of mounting a circuit board by positioning a solder paste distribution tool over a mounting location of the circuit board, the solder paste distribution tool defining a solder paste aperture having a non-circular cross-sectional shape (Figure 6a, item 33); applying solder paste to the mounting location of the circuit board through the solder paste distribution tool such that a portion of the solder paste passes onto the mounting location through the solder paste aperture having the noncircular cross sectional shape (Figure 6b, item 7); removing the solder paste distribution tool from the mounting location (column 5, Lines 60-67); and disposing the circuit board component over the mounting location and providing heat to form solder joints between the circuit board component and the circuit board, one of the solder joints being formed from the portion of the solder paste that passed onto the mounting location through the solder paste aperture having the noncircular cross sectional shape (column 6, Lines 1-15).

With respect to Claim 16, the teachings of Teshima et al. are the same as relied upon in the rejection of Claim 13. Teshima et al. teach the solder paste tool defined multiple solder paste

Art Unit: 1725

apertures which include the solder paste aperture having the noncircular cross sectional shape wherein the step of applying solder includes passing the solder paste through the multiple solder paste apertures (Figure 6a, item 33 and 32).

With respect to Claim 21, the teachings of Teshima et al. are the same as relied upon in the rejection of Claim 13. Teshima et al. teach passing the portion of the solder paste onto the mounting location of the circuit board through the top opening at the top surface and the bottom opening at the bottom surface (Figure 6b, item 7).

With respect to Claim 22, the teachings of Teshima et al. are the same as relied upon in the rejection of Claim 21. Teshima et al. teach orienting the solder paste distribution tool such that the aperture surface is substantially nonperpendicular with the mounting location of the circuit board when the top and bottom surfaces of the distribution member are substantially parallel to the mounting location of the circuit board (Figure 6b, items 30, 33 and 1).

With respect to Claim 25, Teshima et al. teach positioning a solder paste distribution tool over a mounting location of the circuit board, the solder paste distribution tool defining a solder paste aperture having a noncircular cross sectional shape (Figure 6a, item 33); applying solder paste to the mounting location of the circuit board through the solder paste distribution tool such that a portion of the solder paste passes onto the mounting location through the solder paste aperture having the noncircular cross sectional shape (Figure 6b, item 7); and removing the older

Art Unit: 1725

paste distribution tool from the mounting location (Column 5, line 60 through Column 6, line 20).

With respect to Claim 26, the teachings of Teshima et al. are the same as relied upon in the rejection of Claim 25. Teshima et al. teach passing the portion of the solder paste onto the mounting location of the circuit board through the top opening at the top surface and the bottom opening at the bottom surface (Figure 6b, item 7).

With respect to Claim 27, the teachings of Teshima et al. are the same as relied upon in the rejection of Claim 26. Teshima et al. teach orienting the solder paste distribution tool such that the aperture surface is substantially nonperpendicular with the mounting location of the circuit board when the top and bottom surfaces of the

Allowable Subject Matter

Claims 14-15, 17, 18, 23 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 19 and 20 are allowed.

The following is an examiner's statement of reasons for allowance: The prior art of record does not suggest or teach a method of soldering, particularly where the solder paste passes through partially coinciding circles having different diameters.

Art Unit: 1725

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Johnson whose telephone number is 703-308-0667. The examiner can normally be reached on M-Th 7AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on 703-308-3318. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1495.

jj
July 1, 2003


TOM DUNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700